

HOPE

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MESOTHELIOMA TREATMENT OPTIONS

The treatment program for mesothelioma depends on many factors, including: the stage of the cancer, where the cancer is, how far the cancer has spread, how the cancer cells look under the microscope and the patient's age and desires.

TIME MATTERS

People diagnosed with this disease are often told the expected survival rate is only eight to twelve months. However, specialists in treating malignant mesothelioma at the leading cancer centers often have better statistics.

For instance, the five-year survival rate has approached 40% for selected patients

of Dr. David Sugarbaker at Brigham and Women's Center in Boston. To qualify for Dr. Sugarbaker's treatment you must meet certain criteria. One of them is being in the early stages of the disease, so ***time is of the essence***. To find out more about Dr. Sugarbaker and other physicians and cancer centers specializing in mesothelioma click on [Finding Specialists](#).

[Click here for an article by Dr. David J. Sugarbaker that appeared in the *The Journal of Thoracic and Cardiovascular Surgery*, January 1999 \(12 pages in Adobe PDF format\).](#)

TRADITIONAL CARE

There are three traditional kinds of treatment for patients with malignant mesothelioma:

- [Surgery](#) (taking out the cancer)
- [Chemotherapy](#) (using drugs to fight the cancer)
- [Radiation Therapy](#) (using high-dose x-rays or other high-energy rays to kill cancer cells)

Often two or more of these are combined in the course of treatment.

SURGERY

Diagnostic Procedures

As previously mentioned in the ["Symptoms"](#) section of this website, a



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your questions regarding
mesothelioma diagnosis
and treatment options at
Toll-Free 1-877-367-6376**

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If you would like to receive a free information packet** or have questions about mesothelioma, call us at:

Toll-Free 1-877-FOR MESO (367-6376)

**Packet includes information on specialists, treatments, clinical trials, cancer links, and how to access legal and financial resources. You will be contacted by a Mesothelioma Web co-ordinator who will be available to discuss questions you might have.

diagnosis of mesothelioma from fluid is many times inconclusive. Given this fact, diagnostic surgery becomes a necessary next step in confirming and staging mesothelioma.

Thoracoscopy enables a physician to evaluate the pleural cavity and to conduct multiple tissue biopsies under direct vision. In up to 98% of cases, a definitive diagnosis can be obtained. Often, chemical pleurodesis aimed at relieving the accumulation of fluid in the intrapleural space, can be accomplished during the same procedure. It is also possible to gauge the extent of the tumor, and make a determination of surgical resectability. While less invasive than an open biopsy, it can only be performed on patients where tumor has not obliterated the pleural space.

VATS, or video-assisted thoracic surgery is an alternative to thoracoscopy, although because of its more invasive nature, concerns of tumor seeding increase. By utilizing small incisions, the physician can view the pleural space with the assistance of a camera, and obtain sufficient tissue samples for analysis by a pathologist. Extent of the tumor (i.e., pleural involvement, chest wall invasion) may also be determined, and recommendation as to the type of debulking procedure necessary can be made at this time.

Mediastinoscopy is sometimes used as an aid in staging extent of disease when enlarged nodes are seen using imaging techniques.

Laproscopy is used in mesothelioma patients in cases where imaging techniques suggest possible invasion of the tumor through the diaphragm. This information can be important in evaluating a patient for potential pleurectomy or extrapleural pneumonectomy.

Palliative Procedures

Palliative surgical procedures are those which treat a symptom of mesothelioma, without aggressively treating the disease itself.

Chest Tube Drainage and Pleurodesis is considered the most common of palliative treatments. Fluid build-up, or pleural effusion, is most often the first symptom which will prompt mesothelioma patients to seek medical attention. Once this effusion has occurred, it is many times persistent, returning rapidly after initial thoracentesis (draining of the fluid). In order to eliminate this problem, the pleural space must be closed. This is accomplished by use of a talc slurry or other sclerosing agent which produces an adhesion.

Thoracoscopy and Pleurodesis is done in conjunction with VATS using a powdered form of talc versus talc slurry. Both this and chest tube drainage and pleurodesis will be only effective if there is no tumor encasing the lung which restricts its expansion.

Pleuroperitoneal Shunt plays a limited role in palliation for several reasons. It involves placement of a catheter run under the skin from the pleural to the peritoneal cavity. Obstruction of the catheter and possible seeding of the tumor into the abdominal cavity may be concerns.

Pleurectomy, used as a palliative procedure, may be performed where more extensive surgery is not an option. In these cases, it is understood that all visible or gross tumor will not be removed. It is considered the most effective means of controlling pleural effusion in cases where the lung's

expansion is restricted by disease.

Potentially Curative Procedures

These procedures are performed with "curative intent". Their goal is removal of all gross disease, with the knowledge that microscopic disease will most likely remain. Adjuvant therapy (another form of treatment in addition to the primary therapy) is typically aimed at eliminating residual disease.

For Pleural Mesothelioma:

- **Pleurectomy/Decortication** is usually performed on patients with early stage disease (Stage I and selected Stage II), and attempts to remove all gross tumor. If it is found that all tumor can not be removed without removing the lung, this may be done at the same time and is called **pneumonectomy**.
- **Extrapleural Pneumonectomy** is considerably more radical than other surgical approaches, and should be carried out by surgeons with great expertise in evaluating patients and performing the procedure itself. ([See Finding Specialists](#).) Because in the past surgery alone has failed to effect a cure, or even to help prolong life for any extended period of time, it is currently being combined with traditional chemotherapy and/or radiation, or other new approaches such as gene therapy, immunotherapy or photodynamic therapy.

For Peritoneal Mesothelioma:

- **Cytoreductive Surgery** is aimed at removing all or nearly all of the gross or visible tumor in the peritoneal cavity. In order to treat any remaining cancer cells, Intra-Peritoneal Hyperthermic (heated) Chemotherapy (IPHC) is then delivered to the abdominal cavity. The type of chemotherapy drug used may vary according to the physician's preference.

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CHEMOTHERAPY

Chemotherapy is defined as the treatment of cancer using chemical substances. When cancer occurs, abnormal cells continue to divide uncontrolled. Anticancer, or chemotherapy drugs, work to destroy cancer cells by preventing them from multiplying.

Purposes of Chemotherapy

Chemotherapy may be used to achieve different goals, depending on the stage of the cancer at the time of diagnosis and the age and health of the patient. Since chemotherapy for mesothelioma is not considered "curative", the goal is:

- To control the cancer by stopping its spread or slowing its growth.
- To shrink tumors prior to other treatments, such as surgery. This is called neoadjuvant chemotherapy.
- To destroy microscopic disease which may remain after surgery. This is called adjuvant chemotherapy.

- To relieve symptoms, such as pain. This is called palliative chemotherapy, and is given in cases when a drastic reduction in the tumor is not expected.

The most common use for chemotherapy in mesothelioma patients, is as an option for those who are not surgical candidates, however, various cancer centers are now conducting trials using the neoadjuvant approach. Alimta (pemetrexed) is a new drug recently approved by the Food and Drug Administration (FDA) for use with Cisplatin in the treatment of patients with malignant pleural mesothelioma whose disease is either unresectable or who are not candidates for curative surgery. Alimta is the first drug approval specific to mesothelioma.

The Alimta/Cisplatin chemotherapy regimen is the first Food and Drug Administration (FDA) approved treatment specifically for malignant pleural mesothelioma. This is currently considered the most effective first-line treatment for mesothelioma patients who are not surgical candidates. A multi-targeted antifolate drug, Alimta works by blocking the enzymes necessary for DNA copying and cell division. During the clinical trial process, Alimta/Cisplatin improved median survival for pleural mesothelioma patients by approximately three months over treatment with Cisplatin as a single agent. Eli Lilly's information on treatment with Alimta.

As with any medical treatment, it is important to discuss the use of Alimta with your doctor. This conversation should include all pertinent information regarding effectiveness, administration and possible side effects of the drug combination. It is also important to begin vitamin supplementation of B12 by injection during the week prior to treatment (to be repeated every 9 weeks), and folic acid by mouth daily (to be continued until 21 days after the last cycle of Alimta). Additionally, you will be given an oral steroid medication to minimize the risk of skin rash or other possible side effects. Your doctor will have information on the correct dosages of each medication. Be sure to tell your doctor of any other medications you are taking (including non-prescription drugs) so he may be aware of any adverse interactions.

Alimta/Cisplatin is administered to patients on an outpatient basis every 21 days. This cycle of treatment involves a 10-minute IV infusion of Alimta followed by a 2 hour infusion of Cisplatin. How many cycles of treatment you receive will be dependent on your response rate to the drug (regression of the tumor or halt to progression of the disease) and the side effects you might experience.

Side effects of Alimta/Cisplatin are mild to moderate for most mesothelioma patients, i.e., nausea, vomiting and fatigue, and can usually be managed by your doctor. For some patients, however, side effects may be debilitating, and may require a decrease in dosage or removal from the program. All potential side effects should be mentioned to your doctor. Never assume any complaint is minor.

Administration of Chemotherapy

The most common way to administer chemotherapy is intravenously, or through a vein. A thin needle is inserted into a vein in the hand or in the lower arm. Intravenous administration of drugs allows for rapid entry into the blood stream. Drugs may also be delivered via catheters and/or ports.

- Catheters are soft, thin, flexible tubes placed into a large vein in the body. They remain in place for as long as they are needed.

- The catheter may sometimes be attached to a port, a small round plastic or metal disc placed under the skin on the chest. Ports also remain in place for as long as necessary.

Intraperitoneal chemotherapy may also be delivered through a catheter or a port. The catheter is inserted through the abdominal wall. Chemotherapy drugs can then be infused directly into the abdominal cavity. Ports may also be placed under the skin of the abdominal wall and the catheter tunneled between the skin and muscle into the peritoneum.

Side Effects of Chemotherapy

Cancer cells grow and divide more rapidly than normal cells, but some normal cells also multiply quickly, particularly those in the digestive tract, reproduction system, and hair follicles. It is the damage done to normal cells that causes side effects. The type of side effects you might experience and how severe they are, depend on the type of chemotherapy you are receiving, the dosage given and how your own body reacts. Before beginning any chemotherapy treatment, you will be asked to sign a consent form. Before signing the form, be sure your doctor informs you of all the facts regarding the treatment he/she will be administering, including information about the particular drug or combination of drugs to be used, the possible risks or side effects, the number of treatments you will receive and how often, and whether it will be given during a hospital stay or on an outpatient basis.

[Click here](#) if you are interested in learning more about [chemotherapy for mesothelioma](#) and the types of questions you should ask your doctor.

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RADIATION THERAPY

Radiation therapy, also called **radiotherapy**, treats cancer by using penetrating beams of high energy or streams of particles called radiation. In treating mesothelioma, radiation may be used aggressively in combination with surgery, or palliatively to control symptoms.

In an aggressive combined modality approach, radiation is used to attack microscopic or residual disease remaining in the chest cavity after extrapleural pneumonectomy. An example of this is Intensity Modulated Radiation Therapy ([IMRT](#)), which uses x-rays of varying intensities in conjunction with computer generated images to deliver targeted radiation directly to cancer cells while reducing the amount of radiation to surrounding healthy tissue.

Used palliatively, radiation can help control metastases (spread) of the tumor along tracks left by invasive procedures such as thoracoscopy, needle biopsy and chest tube drainage, or to control disease symptoms, such as pain or shortness of breath.

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[A Word About Nutrition](#)

Patient's Bill of Rights

The American Hospital Association has adopted a Patient's Bill of Rights which is good for families to review before embarking on any aggressive treatment.

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